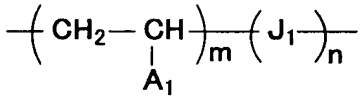
What is claimed is:

1. A diarylamino group-containing copolymer comprising a molecular chain represented by the formula (1):

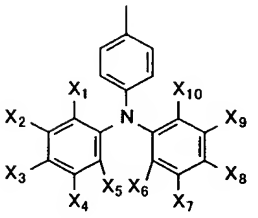


(1)

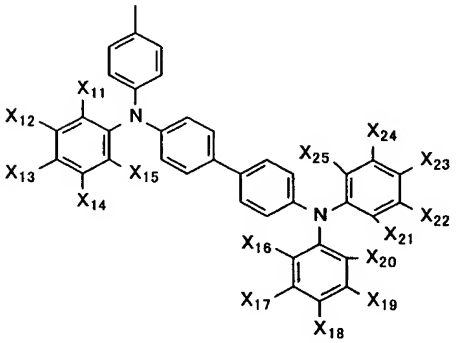
and molecular chain terminals which are each independently a radical polymerization initiator residue or a hydrogen atom, the copolymer having a degree of polymerization of 3 to 500,

wherein, in the formula (1),

A_1 represents a group represented by the formula (2) or (3):



(2)

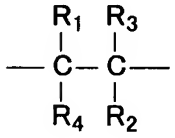


(3)

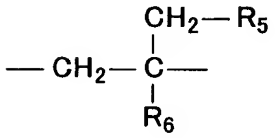
and in the formulas (2) and (3), X_1 to X_{25} each independently represents a hydrogen atom, a halogen atom, a C_1 to C_{22} alkyl group, a C_1 to C_{22} alkylthio group, a C_1 to C_{22} alkoxy group which may be substituted with a halogen atom, an N,N-

dialkylamino group in which each alkyl group is a C_1 to C_{22} alkyl group, a phenyl group, or an N,N-diphenylamino group,

J_1 represents a repeating unit represented by any of the formulas (4) to (7):



(4)



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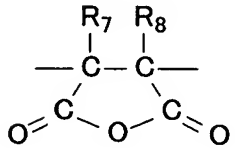

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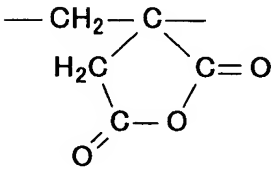


(7)

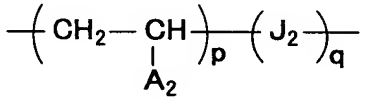
and in the formulas (4) to (7), R_1 to R_6 each independently represents a hydrogen atom, a C_1 to C_4 alkyl group, a carboxyl group, or an alkyloxycarbonyl group in which the alkyl group is a C_1 to C_{22} alkyl group, R_7 and R_8 each independently represents a hydrogen atom or a C_1 to C_4 alkyl group, with the proviso that at least two of R_1 to R_4 represent a carboxyl group and at least one of R_5 and R_6 represents a carboxyl group, and

m and n represent positive numbers.

2. The diarylamino group-containing copolymer according to claim 1, wherein a ratio of m to n, m:n, is from 1:1 to 4:1.

3. The diarylamino group-containing copolymer according to claim 1, wherein the degree of polymerization is within a range of 10 to 200.

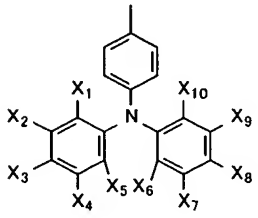
4. An organic electroluminescent device comprising an anode, a hole transport layer, an emitter layer and a cathode, which are provided on a transparent support, wherein the hole transport layer comprises a layer made of a copolymer represented by following formula (8):



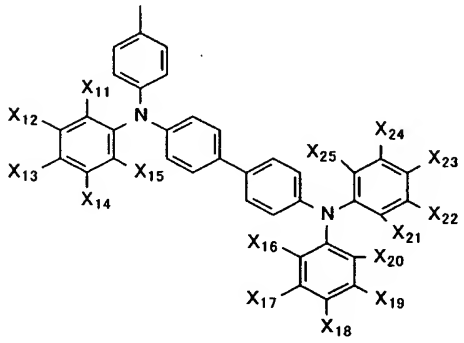
(8)

and in the formula (8), A_2 represents a group selected from the group consisting of an N,N-diaryl-substituted amino group, a group having an N,N-diaryl-substituted amino moiety, a trialkylamino group, a pyrazoline-containing group, a stilbene-containing group, a hydrazone-containing group, an oxadiazole-containing group, a phthalocyanine-containing group, a naphthalocyanine-containing group, a porphyrin-containing group and a C_{60}-containing group, J_2 represents a polymerizable unsaturated monomer unit having at least one functional group, and p and q represent positive numbers.

5. The organic electroluminescent device according to claim 4, wherein A_2 in the formula (8) is at least one selected from groups represented by the formulas (2) or (3):



(2)

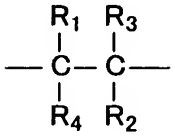


(3)

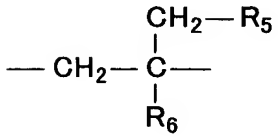
in the formulas (2) and (3), X_1 to X_{25} each independently represents a hydrogen atom, a halogen atom, a C_1 to C_{22} alkyl group, a C_1 to C_{22} alkylthio group, C_1 to C_{22} alkoxy group which may be substituted with a halogen atom, an N,N-dialkylamino group in which each alkyl group is a C_1 to C_{22} alkyl group, a phenyl group, or an N,N-diphenylamino group.

6. The organic electroluminescent device according to claim 4, wherein a functional group of the polymerizable unsaturated monomer unit is at least one selected from a carboxyl group consisting of a hydroxyl group, an amino group, an isocyanate group and an acid anhydride group.

7. The organic electroluminescent device according to claim 4, wherein J_2 in the formula (8) is at least one selected from the group consisting of monomer units represented by the formulas (4), (5), (6) and (7):



(4)



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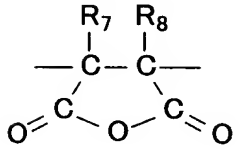

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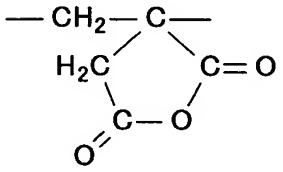

(7)

8. The organic electroluminescent device according to claim 4, wherein a coupling agent having a group capable of forming covalent bonds with a functional group of a copolymer represented by the formula (8) is fixed on the anode surface, and the anode and a layer made of the copolymer represented by the formula (8) are bonded by covalent bonds via the coupling agent.

9. The organic electroluminescent device according to claim 4, wherein the hole transport layer has a multi-layered structure in which at least one layer made of the copolymer represented by the formula (8) and at least one layer made of a compound having two or more groups per molecule which are capable of forming covalent bonds with a functional group of the copolymer layer are alternately laminated via covalent bonds.

10. The organic electroluminescent device according to claim 9, wherein the group capable of forming covalent bonds with a functional group of the copolymer represented by the formula (8) is at least one selected from an amino group, an isocyanate group and a hydroxyl group.

11. The organic electroluminescent device according to claim 9, comprising two or more layers made of the copolymer represented by the formula (8), the copolymer layers of which are provided in the order of increase in an ionization potential from the anode.

12. An organic electroluminescent device comprising an anode, a hole transport layer, an emitter layer and a cathode, which are provided on a transparent support, wherein the hole

transport layer comprises a layer made of a diarylamino group-containing copolymer of claim 1.

13. The organic electroluminescent device according to claim 12, wherein a coupling agent having an amino group is bonded with the surface of the anode, and the coupling agent and a layer made of the diarylamino group-containing copolymer are bonded through an amide bond or an imide bond.

14. The organic electroluminescent device according to claim 12, wherein the hole transport layer comprises a layer made of a compound having two or more amino groups per molecule, and a multi-layered structure in which at least one layer made of the diarylamino group-containing copolymer and at least one layer made of a compound having two or more amino groups per molecule are alternately laminated through an amide bond or an imide bond.

15. The organic electroluminescent device according to claim 14, wherein the multi-layered structure comprises two or more layers made of the diarylamino group-containing copolymer, the layers of which are provided in the order of increase in an ionization potential from the anode.

16. A method of producing a hole transport layer for an

organic electroluminescent device which has an anode, a hole transport layer, an emitter layer and a cathode, which are provided on a transparent support, the method comprising the steps of:

(I) bringing a solution containing a coupling agent having a functional group capable of forming covalent bonds with a functional group of the copolymer of claim 4 into contact with the surface of the anode provided on the transparent support to form a layer made of the coupling agent, and

(II) bringing a solution containing the copolymer of claim 4 into contact with the surface of the layer made of the coupling agent to form a layer made of the copolymer.

17. The method of producing a hole transport layer for an organic electroluminescent device according to claim 16, which further comprises the step of heating after each of the steps (I) and (II) or after the step (II).

18. The method of producing a hole transport layer for an organic electroluminescent device according to claim 16, wherein the functional group of the copolymer is a carboxyl group or an acid anhydride group, and the functional group of the coupling agent is an amino group.

19. The method of producing a hole transport layer for an

organic electroluminescent device according to claim 16, which further comprises the following step of:

(III) bringing a solution containing a compound having two or more functional groups capable of forming covalent bonds with a functional group of the copolymer into contact with the surface of a layer made of the copolymer to from a layer made of the compound, after the step (II).

20. The method of producing a hole transport layer for an organic electroluminescent device according to claim 19, which further comprises the step of heating after the step (III).

21. The method of producing a hole transport layer for an organic electroluminescent device according to claim 19, wherein the functional group of the compound having two or more functional groups capable of forming covalent bonds with a functional group of the copolymer is an amino group.

22. A method of producing a hole transport layer for an organic electroluminescent device in an organic electroluminescent device comprising an anode, a hole transport layer, an emitter layer and a cathode, which are provided on a transparent support, the method comprising the steps of:

(i) bringing a solution containing a coupling agent having a

functional group capable of forming covalent bonds with a functional group of the copolymer of claim 4 into contact with the surface of the anode provided on the transparent support to form a layer made of the coupling agent,

(ii) bringing a solution containing the copolymer of claim 4 into contact with the surface of the layer made of the coupling agent to form a layer made of the copolymer,

(iii) bringing a solution containing a compound having two or more functional groups capable of forming covalent bonds with a functional group of the copolymer of claim 4 into contact with the surface of the layer made of the copolymer to form a layer made of the compound, and

(iv) alternately laminating at least one layer made of the copolymer of claim 4 and at least one layer made of a compound having two or more functional groups capable of forming covalent bonds with a functional group of the copolymer, in this order, after the step (iii).

23. The method of producing a hole transport layer for an organic electroluminescent device according to claim 22, which further comprises the step of heating after each of the steps (i) to (iv) or after any step.

24. The method of producing a hole transport layer for an organic electroluminescent device according to claim 22,

wherein the functional group of the copolymer is a carboxyl group or an acid anhydride group, and the functional groups of both the coupling agent and the compound having two or more functional groups capable of forming covalent bonds with a functional group of the copolymer are amino groups.